

PATENT COOPERATION TREATY

(cont. of PCT/ISA/220)

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

To:

see form PCT/ISA/220

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/003965

International filing date (day/month/year)
15.04.2004

Priority date (day/month/year)
17.04.2003

International Patent Classification (IPC) or both national classification and IPC
B60B27/00, F16D65/10, F16D65/12

Applicant
AKTIEBOLAGET SKF

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2, 6, 7, 9-13
	No: Claims	1, 3-5, 8, 14
Inventive step (IS)	Yes: Claims	10-12
	No: Claims	1-9, 13, 14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

State of the Art

The following documents (D) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

- D1: US-B-6 230 8481 (LANGER ROLAND ET AL) 15 May 2001 (2001-05-15)
- D2: EP-A-0 860 626 (SKF IND SPA) 26 August 1998 (1998-08-26)
- D3: US-B-6 450 5851 (KOCHSIEK GUIDO) 17 September 2002 (2002-09-17)
- D4: EP-A-0 834 670 (SKF IND SPA) 8 April 1998 (1998-04-08)
- D5: US 2001/019640 A1 (TAJIMA EIJI ET AL) 6 September 2001 (2001-09-06)

Novelty

1. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of independent claim 1 is not new in the sense of Article 33(2) PCT.
 - 1.1 Prior art document D1 (claim 1; fig. 1-3) pursuant to Article 33 (2) PCT already discloses a hub and braking rotor unit for the wheel of a motor vehicle comprising: a rotatable hub having an outwardly projecting radial flange (1) defining an outwardly facing edge (2), a braking rotor (12) which is integral with or fixed for rotation with a flange (6) which projects radially inwards and which defines an opening with an internal edge (2), where the edges of the two flanges (1 and 6) are adjacent to each other and face each other radially, where the edges (2) have, at least along one portion thereof, the same non-circular shape in the same radial plane in order to enable the braking torque to be transmitted from the braking rotor (12) to the hub.
2. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of dependent claims 3 to 5, 8 and 14 is not new in the sense of Article 33(2) PCT.
 - 2.1 Regarding the dependent claims 3 to 5 it is noted that it is known from the prior art

document D1 (fig. 1-3) which already discloses all subject-matter of independent claim 1, that the edges (2) of the two flanges (1 and 6) have substantially congruent profiles viewed in the axial direction; that the two flanges (1 and 6) are substantially aligned in the same radial plane and that the braking rotor (12) is mounted directly on the flange (1) of the hub and that the flange (6) projecting radially inwards is formed integrally by the braking rotor (12).

- 2.2 Prior art document D1 (fig. 1-3) as well discloses the subject matter of dependent claim 8, that the outwardly facing edge (2) is formed at least in part by the external edge of an axially thickened portion (3) formed on a face of the flange (1) of the hub.
- 2.2 Prior art document D1 (fig. 1-3) further discloses the subject matter of dependent claim 14, that the hub and braking rotor unit also comprises retaining means (3) suitable for blocking or limiting relative axial movement.

Inventive step

2. The present application does not meet the requirements of Article 33 (1) PCT because the subject-matter of claims 2, 6, 7, 9 and 13 does not involve an inventive step in the sense of Article 33(3) PCT:
- 2.1 The additional features of claim 2, that the edges of the two flanges have a same generally oval or elliptical shape are per se known from document D2 (fig. 2, 3) that deals with a hub assembly. The skilled person would therefore regard it as a normal option to include this feature in the assembly of claim 1 coming to the solution as claimed without inventive skill.
- 2.2 The additional features of claims 6 and 7, that concern the use of an intermediate additional support member are per se known from document D4 (fig. 1 - 12) that deals with a hub assembly as well. The skilled person would therefore regard it as a normal option to include this feature in the assembly of claim 1 coming to the solution as claimed without inventive skill.
- 2.3 The additional features of claim 9, that concern a plurality of axially thickened formations which extend radially on a face of the flange of the hub are per se known from document D5 (fig. 23) that deals with a hub assembly as well. The skilled

person would therefore regard it as a normal option to include this feature in the assembly of claim 1 coming to the solution as claimed without inventive skill.

- 2.4 The additional features of claim 13 are regarded as mere mechanical measures falling within the scope of customary duties of the skilled person.

Combining these additional features with the subject-matter of any claim this claim is referring to does not appear to involve an inventive step according to Article 33(1) and 33(3) PCT.

Further prosecution

3. Claims 10 to 12 seem to disclose subject-matter which is neither known nor obvious in the respective art. Therefore, it is suggested to draft new amended independent claims comprising some or all of this subject-matter.
4. When reformulating the claims care should be taken that those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

Accordingly the whole subject-matter of present claim 1 has to be put into the preamble of the amended claim 1.

5. The description must be brought into conformity with the amended claims to be filed; care should be taken during revision, especially of the introductory portion including any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed and to avoid any infringement of Articles 19(2) or 34(2) PCT respectively.

Re Item VII

Certain defects in the international application

- Concerning the description

6. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 is not mentioned in the description, nor are

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AUTHORITY (SEPARATE SHEET)**

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these documents identified therein. It should be stated in the description that document D1 forms the closest prior art from which the invention departs and which forms the base for the preamble of independent claim 1.